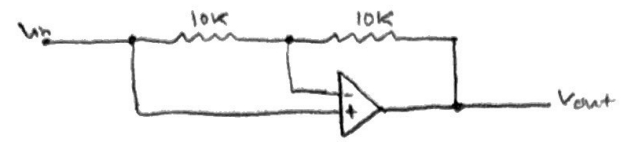
HW 8

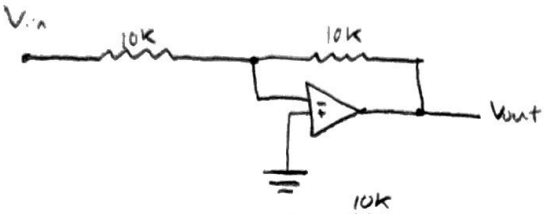
44 A]



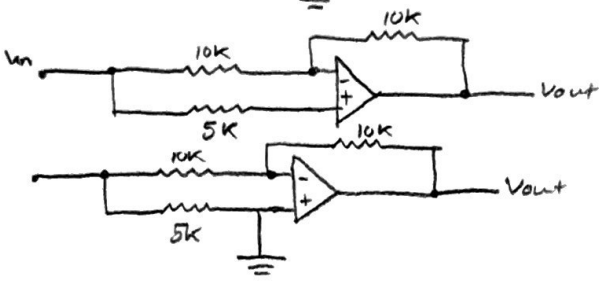
$V_{in} - IR_1 = V_{out}$ $\quad I = 0$

$\therefore \quad V_{in} = V_{out}$

or



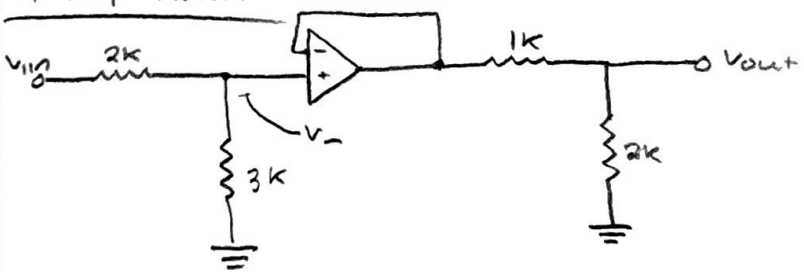
B]



$V_+ = V_{in} = V_- = V_{out}$ - follower

$V_+ = 0$

Op Amp handout



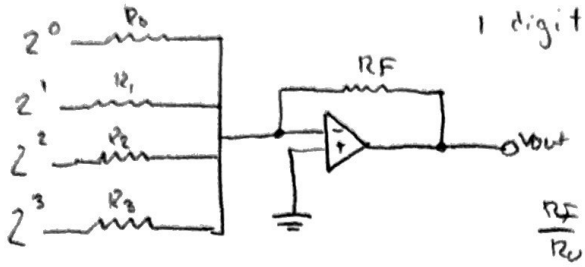
$$V_- = \frac{3k}{5k} V_{in} = \frac{3}{5} V_{in}$$

$$V_{out} = \frac{2k}{3k} V_- = \frac{2}{3} \cdot \frac{3}{5} V_{in} = \frac{2}{5} V_{in}$$

$V_{out} = \frac{2}{5} V_{in}$ if $V_{in} = 10V$

$V_{out} = 4V$

46)

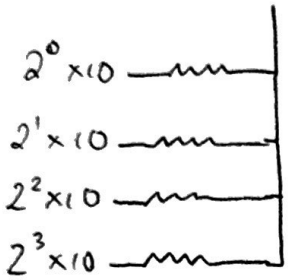


1 digit

$\frac{RF}{R_0} = 1 \quad \frac{RF}{R_1} = 2 \quad \frac{RF}{R_2} = 4 \quad \frac{RF}{R_3} = 8$

$RF = 8k$

$R_0 = 8k \quad R_1 = 4k \quad R_2 = 2k \quad R_1 = 1k$



2 digit

$\frac{RF}{R_0} = 0.1 \quad \frac{RF}{R_1} = 0.2 \quad \frac{RF}{R_2} = 0.4 \quad \frac{RF}{R_3} = 0.8$

$\frac{RF}{R_{00}} = 1 \quad \frac{RF}{R_{10}} = 2 \quad \frac{RF}{R_{20}} = 4 \quad \frac{RF}{R_{30}} = 8$

$R_0 = 80k \quad R_1 = 40k \quad R_2 = 20k \quad R_3 = 10k$

$R_{00} = 8k \quad R_{10} = 4k \quad R_{20} = 2k \quad R_{30} = 1k$

$\frac{RF}{R_0} = \frac{1}{5} \quad \frac{RF}{R_2} = \frac{2}{5} \quad \frac{RF}{R_3} = \frac{4}{5} \quad \frac{RF}{R_4} = \frac{8}{5}$

$RF = 8k$

$R_0 = 40k \quad R_1 = 20k \quad R_2 = 10k \quad R_3 = 5k$